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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers and improve the character of the service rendered to the public.

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ON THE REMOVAL OF BUOYS.

Capt. John G. Keith of Chicago, who is a member of the Lake Carriers' board of managers, states that at the annual meeting of the association he will endeavor to have an appeal to the lighthouse board adopted asking that lighthouses be kept in operation much later than they are now—say up till Dec. 15.

There can be no exact date arranged for the closing of navigation each season, yet, there should be no difficulty about reaching off shore aids to navigation in the young ice. Three large valuable steamers, the Aurora, Wallula and Missoula were on the lakes loaded with grain from Chicago to Buffalo this week and many other well equipped steamers might also be running only that underwriters on freight and cargo crawfish out of the risks by alleging that the removal of government buoys closes the season of navigation.

It is quite certain that the Light-House Board nor the Inspectors of the several lake districts desire to influence underwriters in such a manner, nor need they, if prompt measures are taken to bring the buoys ashore at the latest navigable date, but one tender will not be sufficient to cover all the ground. There is ample local assistance to be obtained at all points at a moderate cost and reflections on the service regarding the early raising of the buoys by the tenders so as to complete the district work, instead of their being left two weeks longer, have already been heard. This complaint is an annual one and requires judicious handling to suit lake navigation and save the more expensive aids, although the damages of only one steamer getting ashore through the absence of a beacon or buoy would defray the cost of many of these minor aids even if such were entirely destroyed at the close of each season.

WELL MERITED APPROBATION.

Before retiring from the duties of naval secretary of the Light-House Board, Commander Geo. W. Coffin presented Mr. Walfrid Sylven, superintending engineer of the Board, with a very congratulatory testimonial letter, endorsed by Rear Admiral James A. Greer, heartily commending Mr. Sylven in the highest terms for his professional ability thorough technical knowledge and reliability in all matters pertaining to the draughting, construction and equipment of special tonnage for the U. S. Light-House service.

During the three and a half years that Mr. Sylven has been with the Board he has designed and completed nineteen vessels, all of which have given excellent satisfaction in their special line of service, and such well merited approbation voluntarily furnished by departmental superiors will no doubt go far towards retaining the best services of so well qualified a government official as Mr. Walfrid Sylven has proved himself to be.

TONNAGE CLASSED.

The American Shipmasters' Association have just classed in the "Record of American and Foreign Shipping" the following vessels: American half brig Eugene Hale and bark Willard Mudgett; British schooners Carrie Easler, Elma and three-masted schooner Moss Rose, Danish bark Jorgensen and Swedish bark Margaretha.

FAST STEAMERS TO LESSEN THE TIME BETWEEN THE TWO CONTINENTS.

It has been authoritatively announced that on February 25 next the Inman Line will inaugurate a new feature in its transatlantic service.

Owing to the superiority of Southampton as a terminal port, a large amount of money has been spent to build there such facilities as the International Navigation Company required before they could make it the foreign home for their steamships. All arrangements having now been completed, the two great twin screw steamers, City of New York and City of Paris, will next year point their bows toward their new home and take a new course direct for Southampton.

This will be of great advantage to travelers whose destination is Paris or the other great cities of the Continent, besides insuring a faster transportation of the mails.

It is a well known fact that with boats considerably slower than the City of New York and City of Paris other steamship lines are able to get passengers and mails to London in an hour or two less time than can the faster Liverpool ships. This difference, it is said, will become very great when the Inman's Line steamships sail direct to Southampton next February.

DRY DOCK AND A SHIPYARD FOR SAULT STE. MARIE.

In our last issue it was announced that certain capitalists intended to start an iron and steel shipyard at Duluth, Minn. There is now a movement on foot whereby Sault Ste. Marie may secure a large steel and iron shipbuilding plant. Several Cleveland and Eastern capitalists, headed by Mr. Bishop, addressed a communication to Mayor Brown asking what inducements, if any, the "Soo" is willing to hold out for the establishment of such an industry, which would cost $300,000 and give employment to 300 men. They have made the city a proposition which will no doubt be accepted. In connection with their plant the company expect to erect machine shops and a large dry dock.

There is a State dry dock sinking fund of several thousand dollars that might be used to further the Bishop enterprise, and Sault Ste. Marie presents an admirable location for such a plant, though whether the deal will be successfully carried through or not it is yet too early to venture an opinion. It is known, however, that a site for another lake shipyard is being looked up, the syndicate having examined two points at Cleveland with unsatisfactory results; besides, mechanical and industrial plants of large pretentions are working to the westward, and it is now generally recognized that Lake Superior will eventually become the center of lake shipbuilding, the construction work being carried on under cover during the winter.

EFFICIENCY OF PROPELLERS.

At the recent meeting of the American Society of Mechanical Engineers a paper was read by W. F. Durand, of Ithaca, N. Y., on "The Limit of Propeller Efficiency as Dependent on the Surface Form of the Propeller," showing that the limit of efficiency of the element of the surface of a propeller, working under any given conditions, is an absolute geometrical quantity, depending solely on its direction and motion, and on the motion of the ship. That the limit of efficiency of an entire propeller, composed of helicoidal surfaces of the same uniform pitch, is equally simple and definite. That the limiting efficiency of propellers in general, whether considered as surfaces not truly helicoidal, or as solids such as are actually used, depends on the additional consideration of the distribution of work over their surfaces. The latter being a subject of great complexity, and depending on the ship as well as the propeller, does not admit of general analytical treatment. It is shown, however, that certain limits may usually be laid down between which the efficiency in any given case may be; and in case of solids, as actually used, it is shown that such suppositions as can be made lead to the natural conclusion that thickness in general is detrimental to efficiency.

Experience has shown that the heavy piston required for marine screw engines can safely be run from 700 to 840 feet per minute, instead of 400 to 450 feet, which was the limit but a few years ago. Rankine says the limit beyond which the velocity of the piston cannot with advantage be increased is not yet known. There must, however, be some such limit because of the increase of the resistance to the motion of the steam through the passages with the increased velocity of its flow. The sizes required for steam and exhaust ports and pipes are inconveniently large when a speed about 800 feet per minute is given a large piston.

ADDITIONS TO THE UNITED STATES NAVY.

Bids have just been received at the navy department for the construction of seagoing battle ship No. 1, of about 9,000 tons displacement, known as the Iowa, and armored cruiser No. 3, of 8,000 tons displacement, known as the Brooklyn. The bids were as follows: Battle ship No. 1, Newport News Ship Co., $3,233,000 on department plans; Union Iron Works, of San Francisco, $3,150,000 on department plans; Bath Iron Works, of Bath, Me., $3,185,000 on department plans; Cramp & Sons, $3,010,000 on department plans and $3,110,000 on their own plans of one class and $2,870,000 for their own plans of another class.

Cruiser No. 3: Newport News Ship and Dry Dock Co., of Newport News, Va., $3,147,000 on department plans; Union Iron Works, of San Francisco, $3,150,000 on department plans; Bath Iron Works, of Bath, Me., $3,165,000 on plan prepared by bidder; William Cramp & Sons, of Philadelphia, $2,986,000, according to department plans, $3,086,000 according to one plan of bidder, and $2,880,000 according to a modified plan. It will be seen that Cramp & Sons are the lowest bidders for both vessels.

NEWS AROUND THE LAKES.

CLEVELAND, O.

Captain Cuson, ships-husband of the Whitney fleet and Mr. E. C. Recor, vessel owner of St. Clair, visited this port Wednesday.

Owners are busy this week squaring up accounts with their masters and engineers, and all those who reside out of town are leaving in haste.

Captain Morton, ships-husband for the Wilson Transit Co., accompanied the last boat down from Chicago to Buffalo and after seeing them wintered all right will return to this port.

Capt. McDougall, general manager of the American Steel Barge Co., spent Sunday and Monday of this week in the city. The inventor of the world renowned "whalebacks" is enjoying his usual robust health and looks as hearty as of yore.

Mr. Alex Smith one of the proprietors of *Seaboard*, New York, is visiting the city this week in the interest of his publication. Mr. Sinclair Stuart, Surveyor for the "United States Standard Register of Iron and Steel vessels, has also been in port this week.

Ulysses Ziegler, employed as watchman on J. A. and L. P. Smith's dredge, was drowned on Monday afternoon. It is not known how the accident occurred, but it is supposed that he lost his balance and fell overboard. His cries were heard by the crew but they were unable to rescue him.

Captain S. C. Thompson of the steamer Henry J. Johnson has just recovered from a severe attack of cold, caught after laying his steamer up. It is also rumored that Captain Holmes has met with a motor accident, but how severe it is we had not learned at the time of going to press.

The Cleveland Dry Dock Co. will soon be ready for business at their enlarged dry dock and a number of orders are already placed for docking vessels at the earliest opportunity. Brisk work will again be in order at this handy location and the whirr of the calking mallet be heard long before the spring wakens up the now dormant fleet of lake carriers.

Excellent work is being done at the yards of the Cleveland Ship Building Co. on the two large steel steamers now being built to the order of Mr. M. A. Bradley and Capt. Thos. Wilson. The machinery and boiler shop departments are also well filled with new work and orders are booked well ahead so that a brisk business is assured until well on into next year.

The fifteenth annual ball of the Cleveland tug men took place Tuesday evening, at Turn hall, on Lorain street. It was a very pleasant occasion and was largely attended. Captain H. J. Coulter was floor director, and the success of the affair was entered into by all hands. E. E. Ennes, T. E. Biers and Capt. John Hobson were the committee of arrangements and they carried out their mission perfectly, as usual.

It is now settled that the Hill Line passenger steamers under construction at the yards of the Globe Iron Works Co., are each to be equipped with quadruple expansion engines, the first ever built or used on the lakes, and twenty-eight Belleville boilers to carry 225 pounds steam. The whole capacity of the lower hold is to be taken up with the engines, boilers and fuel, and no craft on the lakes is to touch them in point of speed or equipment.

The dry dock enterprise at Sault Ste Marie will no doubt be carried to a successful issue. I have interviewed some prominent men at this port interested in the matter and they insist upon nothing further being said regarding their plans at this time, but I can say that the right men are at the back of the new departure and the industry is in a fair way of being accomplished if proper concessions are made at Sault Ste Marie and the capitalists hold to their present views of the question.

Mr. T. F. Newman, who retires as general agent of the D. & C. Steam Navigation Co. on January 1st to accept the office of general manager of the Cleveland & Buffalo Transit Co., was given a farewell banquet on Tuesday night and presented with a beautiful onyx clock, flanked on either side by five branched candelabra of the same rich material and pattern, by the employes of his old company. Mr. Newman is a prime favorite with all classes at this port and only the best wishes are heard for his brightest success in his new field of labor.

Captain Wood, a Lake Superior mining expert who has been in that section of the country for the past thirty years, was met in a vessel owner's office on Tuesday, and, in speaking of the twenty-foot channel project he stated that in May, 1865-6, he one day counted a fleet of sixty-two vessels in Marquette harbor whose combined carrying capacity would not exceed that of eight or nine modern ships. The query presents itself to the sailor mind whether there would not be more prosperity in a fleet of sixty-two vessels than there is in a dozen large steamers.

Captain William S. Mack, master and part owner of the steamer C. J. Kershaw and consorts Moonlight and Ironton, has made eighteen round trips this season, carrying nineteen cargoes between Marquette and Lake Erie ports. The capacity of these boats is about 4,200 tons, so that a total of 80,000 tons of freight has been carried during the season. Captain Mack has this week purchased the steamer V. H. Ketchum from Col. James Pickands and others for $55,000. The Ketchum was built at Marine City in 1874. She is rated on her first letter in Inland Lloyds with a valuation of $65,000 and she has just received a $7,000 rebuild at this port. She is a good business boat and has been well bought. Captain Mack expects to sail her next season.

The steamer Corona of the Mutual Line, Capt. John B. Hall, has made thirty-nine round trips between Escanaba and Ashtabula this season and would have made the fortieth had she not been delayed for a few days in towing the Cambria. The season record was made between April 16 and December 5th and shows a total distance traversed of 46,800 miles, or at the rate of over 160 miles each day, exclusive of the starting and laying-up days. Seventy-eight trips through the rivers in one season without meeting with any accident, is an enviable record for the master, engineers and deck officers of a large steel steamer to hold, and argues not good luck but the exhibition of first-class engineering skill and seamanship all through.

The Cleveland Yacht Club was granted a lease of 400 feet of the lake front opposite Lake View Park for fifteen years by the council on Monday evening on condition that the right shall be reserved to the public to use the waters at any time, and that the grant may be revoked whenever the city sees fit upon six months' notice being given the club. It is the purpose of the club to build at once a fine boating house opposite the park. In advocating the measure, Dr. Beeman said: "There is no class of people so generous as the yachtsmen and no person will be denied the privilege of the water provided he is sober. The Cleveland Yacht Club is going to put an elegant $18,000 building on the lake front. The club has a lease of the Government property now, but wants to locate as far westerly as possible in order to obtain the shelter of the breakwater, and we welcome everybody."

The managers of the Western Seamen's Friend Society at this port repudiates the remarks made by Assistant Superintendent McMahon, of Pittsburgh, when he stated at the Plymouth Congregational Church, as reported in our last issue, "that deck hands were not worth saving." The managers of the society are using every effort and it is their strongest desire to benefit by the means at their command the entire floating population, or those who earn their living on the western waters and coast line and their wishes in this direction is only limited by the standing of their finances. Several changes and new features have been deliberated upon and are now almost ready to put in force looking towards a more energetic and widespread beneficence among the lakegoing fraternity, who, by force of circumstances have or may become needy and destitute. It is a pleasure to chronicle the foregoing and to note that the Western Seamen's Friend Society will take upon itself more energetic action in behalf of needy seamen and their families.

What is this I hear about two of the crew having made plans for the construction of a new fire boat? There are perhaps minor details relating to the actual fire apparatus about which it would be well to consult the crew of the boat, and as I hear that one of them is an excellent draughtsman, no doubt his views would tend to place the equipment to advantage, but, it is wrong to expect that the science of naval architecture has been taken aboard by these men. Let the appropriation for another fire boat be forthcoming and the most efficient plans would probably soon be adopted. With two fire boats on the river and two or three good pumping plants erected at a cost of a moiety of what is now being considered for new equipment, the city property, stationary and floating, would be well protected. Even one pumping station, equipped with water tube boilers, and hydrants placed where several couplings could be made at once, would be as good for the city as a fire boat for the river and adjacent property, and then only hose carts would be required, but there seems no one to think of a pumping plant to force water down the mains already laid, although pipes are being run for the stationary plant represented by the fire boat to pump water through. Commodore Gardner is right on the new fire boat question, and he would be equally right in advocating the placing of a similar equipment inside of a brick and mortar covering, so as to reach where the fire boat pumps can not.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

The steamer City of New York left here Saturday for Muskegon to lay up.

P. J. Minch of the firm of Palmer & Co., vessel agents, Cleveland, was in this city last week.

John Warner, of the firm of Warner & Son, vessel agents at Cleveland, was here Saturday.

Capt. Thomas Chron, of the steamer J. C. Perrett, left for his home at Bay City Saturday night.

John Duncan, of Green Bay, owner of the steamer Maggie Duncan, was in this city Tuesday.

Capt. John Barry is at Benton Harbor putting the machinery into the Independent Tug Line's new tug building there by E. W. Heath.

The Peshtigo Company have sold their timber lands, mill and fleet to Isaac Stephenson, of Marinette, Wis., and Daniel Wells, Jr., of Milwaukee.

A large number of captains leave for their homes this week to spend the holidays. Many will then return to Chicago to look after their vessels.

The Independent Tug Line steamers Commodore Jack Barry, Welcome and Ira O. Smith, are kept busy running to the various water-works cribs with men and supplies.

H. Channon Company, ship chandlers and sail makers, have in their spacious lofts 54 suits of sails of vessels in winter quarters here, stored away for safe keeping until next season.

Captain William Young, of the steamer Philip Minch, arrived here Tuesday morning from Milwaukee, where he had laid up the steamer. He was on his way home to Vermillion, O., to spend Xmas and New Year.

Cook & Calbick, vessel agents, chartered the schooner Kent and steamer Walter Vail for winter storage and delivery of wheat to Buffalo in the spring. Fleming & Co., vessel agents, on Tuesday chartered the steamer Germanic for 60,000 bushels of wheat for winter storage and delivery at Buffalo in the spring.

At Miller Bros.' shipyard the steamer Lucille was in dock for re-calking, the tug John Miner to have her shaft taken out and wheel taken off, the schooner F. L. Danforth for a survey, the steamer City of Ludington for repairs to stern-bearing, the tug O. B. Green for a rebuild, the schooner G. J. Boyce is getting a new mainmast.

R. Thorsen, shipbuilder, Manistee, was here Tuesday on business. He re-launched the schooner Mediator Saturday, after having given her a thorough rebuild. The tug I. M. Wheeler is on the dock for a thorough rebuild. The tugs Lulu M. Ray and Pottawatimie have received necessary repairs. The schooner Ebenezer will receive considerable repairs. The schooner Lincoln Dall will receive repairs to damage done while ashore. She was released by the Frankfort tug, E. D. Holden last week and towed to Manistee.

S. J. Chapman of the Manistee Iron Works was here Tuesday, his firm have contracted to compound the engine of the steamer Maggie Duncan, which is in winter quarters at Milwaukee. They are building a marine boiler 7 feet 6 inches by 14 feet to be allowed 140 pounds steam pressure for the tug Anne O. Smith of Manistee.

Keith & Carr, vessel agents have chartered the following vessels this month: Steamer Iron King, 73,000 bu. corn to Buffalo. Barge Iron Queen, 81,000 bu. corn to Buffalo. Schooner Iron City, 38,000 bu. corn to Buffalo. Steamer John Oades, 62,000 bu. corn to Buffalo. Barge Wayne, 56,000 bu. corn to Buffalo. Steamer W. A. Avery, 68,000 bu. corn to Buffalo. Barge Ashland, 68,000 bu. corn to Buffalo. Steamer At Parker, 75,000 bu. flax to Buffalo. Steamer Wallula, 82,000 bu. corn and barley to Buffalo. Barge Iron Cliff, 65,000 bu. corn to Buffalo. Steamer George T. Hope, 73,000 bu. wheat to Buffalo. Barge Hawgood, 75,000 bu. wheat to Buffalo. Barge G. W. Adams, 80,000 bu. flax to Buffalo. Steamer Iron Chief, 55,000 bu. wheat to Buffalo. This shows a total of 951,000 bushels carried in fourteen vessels as the business transacted in the first portion of the closing month of lake navigation.

The steamer A. D. Hayward, Capt. W. E. Ladner, arrived here with lumber from Muskegon and went into winter quarters last week. She was the last of the lumber carrying fleet to arrive this season.

Secretary of War Elkins has approved the plans submitted by the City of Chicago for the construction of two bridges across the Chicago River, one at South Halstead Street and the other at California Avenue.

Capt. James Corrigan has not only the judgment but the grit to carry it out and only that the underwriters refused to insure one of his steamers which he proposed to charter for wheat from this port to Buffalo, she would now be on her way down, and I must say there is nothing to stop her; however, it is hardly likely that even Capt. James would cover ship, freight and cargo himself, so the trip has been abandoned and the Wilson Transit Co. holds the record for the last clearance for Buffalo, with the Corrigan Line steamer Aurora a close second and the Bulgaria, Barkis like, "willin'" to cap the record if the underwriters had only had the grit to accept a sure thing at the time.

The stocks of grain in the Chciago elevators and afloat last Saturday evening were 11,111,000 bushels of wheat, 5,094,000 bushels of corn, 2,658,000 bushels of oats, 427,000 bushels of rye, and 42,000 bushels of barley. Total, 19,332,000 bushels of all kinds of grain, against 11,029,000 bushels a year ago. For the same date the Secretary of the Chicago Board of Trade states the visible supply of grain in the United Stated and Canada as 78,320,000 bushels of wheat, 10,723,000 bushels of corn, 6,682,000 bushels of oats, 1,271,00 bushels of rye, and 2,294,000 bushels of barley. These figures are larger than the corresponding ones a week ago by 2,750,000 in wheat and 13,000 in corn. The visible supply of wheat for the corresponding week a year ago increased 1,061,000 bushels.

WILLIAMS.

THE NEW SHIPYARD AT DULUTH—RECEIPTS OF GRAIN—DOCK AND HARBOR IMPROVEMENTS.

Special Correspondence to The Marine Record.

DULUTH, MINN.—Your Duluth correspondent has refrained from any mention of the proposed turtle-back vessel that is to be built at this city this winter, for the reason that the matter was not so far advanced as to admit of the full news being given. It is not so even yet, but the news has gotten out and it will do no harm to tell what may now be told, correctly. This has not heretofore been done. Several times in the past few weeks I have referred to a coming marine development here that would have considerable consequence. This was the building of a new shipyard and the construction there chiefly of this new type of vessel, the turtle-back. As yet no company has been organized, but those in it are ready to get together at any time. They have abundant capital and they have been investigating the matter of a large yard here and the construction of these vessels for a long time, at least six months. Their plans are now about matured. The first vessel will be built during the winter, and will be of about 2500 tons capacity. She will have no machinery. The barge will be almost a cross between the McDougall boat and the monitor type that has been built at a Cleveland yard last year. She will have many of the features of the whaleback, but will not, so say expert patent lawyers who have examined the designs, infringe upon the patents held by the American Steel Barge Company, in the least. There are some changes and improvements on the model of the whalebacks that will, so says the inventor, improve the vessel not a little. Of course it remains to be seen whether this be so or not. These changes are mostly minor matters of constructive detail. There is abundant money behind the new enterprise, and what is fully as needful at this time, there is plenty of capital interested which is able to control freights. It is likely that, other things being equal, the vessels of this company will have their full share of the ore and flour carrying trade of this section. Before the close of navigation this fall the men interested in this new deal built some 700 feet of dock and since then they have begun the erection of a couple of buildings at the location of the yard. These will serve as protection for what machinery will be used at the yard at present. It has been stated in the local press that the company had made a contract with the local Bessemer plant to furnish the steel plate needed for vessel No. 1, but this is a trifle premature. Such a contract will probable be made in a few days and work on the vessel will then begin, possibly soon after the first of the year. While this matter is termed an "experiment," experiments are somewhat expensive undertakings, and this is really no more of that class than was the building of the first whaleback, nor nearly so much so, for that was to all intents and purposes an entirely new type, while this is not such. It may be stated, with assurance, that the new yard will be in the lists for business steadily from the first, and that it will stay in the field as long as any one else. I I hope to have released for publication in THE MARINE RECORD, to which the maritime fraternity look for the freshest news of all that pertains to their trade, a detailed and technical account of this vessel's points at an early date.

A large electric machinery and dynamo construction company is locating here, occupying the old quarters of the Iron Bay Co., just below which will be the new shipyard. This company is now one of the largest installation companies for all sorts of electric machinery in the United States, and it will add much to the facilities of this point for the equipment of vessels.

Wheat continues to come into this city at a very rapid rate, and the wheat blockade that was predicted in this letter a few weeks ago, seems almost upon us. The increase in stocks held here and at the elevators on the Superior side the bay, also under the control of the Duluth Board of Trade, has the past week been 1,045,000 bushels, and the total stocks of wheat here are the splendid total of 12,754,000 bushels. In the week the elevators of the Duluth Elevator Company, three in number, have been filled, and have 4,200,000 bushels therein. One of the two big elevators of the Great Northern road is full and there is enough going into the other to fill it in ten days. These two houses have a capacity of 3,000,000 bushels. The elevators of the Lake Superior and Union Improvement Companies have now 6,200,000 bushels on hand, and have capacity for some 5,000,000 more. Nearly all the capacity of the Duluth Imperial mill, 600,000 bushels, is empty. The receipts for this morning were 675 cars, or about 400,000 bushels, and this flood of grain continues steadily. The country elevators belonging to the Duluth system, with about 4,500,000 bushels capacity are all full, and will not be able to act as reservoirs to hold back the tide of wheat that pours into the city. Long before the opening of navigation the capacity at the head of the lakes will be full of wheat, and there will be at least 18,000,000 bushels for the vessels to carry down in the early weeks of navigation. This wheat is of the highest grade to be found at any primary market in the world, for all but 150,000 bushels of it are high grade stuff. There are also in store here 220,000 bushels of flax and barley, making the total grain in store 13,000,000 bushels.

The Duluth & Iron Range road this afternoon let the contract for the new ore dock work that they will need for next season. Winston Bros., of Minneapolis, and R. B. Dear of this city, are the successful bidders, and the contract price is in the neighborhood of $155,000. This does not by any means include all the work, for the railroad company will furnish all the piling and build the tracks and the chutes. The entire price of the docks will be about $250,000. The work includes the completion of dock No. 4, by the addition of 500 feet to its length, and the beginning of dock No. 3, building 90 pockets, or a little over half. This will be in all 1,000 feet of new dock and will give the road a total ore dock storage capacity of 90,000 tons, which is a good deal more than the railway can furnish ore to run at full capacity. This means that the road will increase its rail line, either by double tracking the present line or by building an entirely new road from the Mesaba, reaching the lake ten miles nearer Duluth than now, and running over the present line to the ore docks. These new docks will consume not less than 6,000,000 feet of timber and a forest of piling, and the timber is to be gotten out, under a provision of the contract, at mills along the line of the road, if possible. The Duluth & Iron Range road is also adding on its own account, 18 pockets to its dock No. 1, giving it in all 500 ore pockets, each capable of storing about 180 tons of ore.

There is yet no ice in the lake, and there does not promise to be any for some time, though the bay is quite well frozen up. There is little new work starting at the American Steel Barge Co.'s yard, but Captain Inman's steel tug will be on the stocks soon, in addition to the two vessels that are now on the ways and the two that are in the water. The package freight barge No. 126 was launched last Saturday. The Duluth ship canal tunnel matter is pursuing the even tenor of its way, and the bids will soon be coming in to the city engineer. It is barely possible that a recent decision of the Supreme court of this State in reference to some improvement assessments that are declared illegal, may straighten the public purse and delay the tunnel, but this is not likely.

United States engineer in charge of the improvement of Lake Superior Harbors, Major Sears, has recommended that the shallow water known as Allouez Bay, where are the terminals of the Duluth & Winnipeg road, and the present ore docks of the Duluth, Mesaba & Northern, be dredged and the bay improved. He says:

Any improvement of the bay will necessarily be by dredging, which, on account of the soft character of the bottom and the proximity of dumping grounds can be done for a comparatively low price. On account of the dock and channel already completed and in use by private parties, etc., I am of the opinion that Allouez Bay is worthy of improvement by the general government. It is estimated that a proper survey upon which to base a project for improvement can be made for $1,200, and that it will take, including office work, not to exceed six weeks. The major does not believe that the improvement of the Nemadji River, that has long been urged by the interests of South Superior, is needed or desirable, and he is against it, which is a severe black eye to that speculative town. The work of dredging Allouez Bay is a vast one and will keep the contractors busy for a long term of years.

PATROCLUS.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

The new revenue steamer Calumet is now nearly all in frame at David Bell's yard. Chief Engineer Chester is still here arranging details regarding the machinery.

The result on the survey of the lumber steamer J. B. Ketchum showed damages to the amonnt of nearly $7,000. She had two large holes punched in her bottom on the port side forward of amidships, and about 40 frames were broken or bent so they will have to be replaced.

Not much is being done by the Union Dry Dock Co. on the new steamer for the Lake Erie Transportation Co., as the removal of the steel yard across the island is proving a most tedious job, and until it is completed work cannot be actively pushed. The two wooden tugs which this firm is building are in frame, and when completed will be launched into their upper dry dock.

H. G. Trout is building triple expansion engines for a new steamer now building at Chicago for C. W. Elphicke & Co., and for the Lake Erie Transportation Co.'s new steel freighter. He is also to furnish a fore and aft compound engine for Hurd & Hauenstein's lumber steamer building at Marine City.

The last vessels of the season have arrived and navigation at this port is closed. The Wallula arrived Monday morning and the Missoula the same afternoon. Navigation closes three days later than in 1891, though not nearly as much business was done in December of this year as in last December.

A new wooden twin screw steamer is building at Black Rock for the White Line Excursion Co. She will be 150 feet long, 32 feet beam and 10 feet depth of hold. Two single high-pressnre engines, 18x22 inches, will be furnished by David Bell. They will take steam from a steel boiler 10x14 feet. The steamer is intended chiefly for river traffic and will be built as light as consistent with proper strength. She is to be planked with 2½ inch oak and will draw seven feet. She is expected to develop considerable speed. Her designer is Mr. Mason, who has designed most of the excursion steamers lately built here, and William J. Ziegel is "putting up the stuff."

Ice formed on Buffalo river for the first time this year on Tuesday, December 19.

P.

TORONTO, ONT.

Special Correspondence to The Marine Record:

The propeller Cuba, formerly reported as having gone into winter quarters at Picton, was unable to reach that port on account of ice and returned here. Extensive repairs will be made to her this winter. Capt. John Malcolmson has been appointed to sail her next season.

Mr. C. A. Jaques, of the firm of G. E. Jaques & Co., of Montreal, was in town on Tuesday. Capt. Thos. Taylor, inspector for Inland Lloyds was also in the city this week. Mr. Fred Elliott Puser, of the steamer Alma Munro, passed through from Montreal to his home in Denver, Colorado.

Messrs. Crangle & Hogarty, owners of the steamer Rosedale, will leave next week for England, where they intend to purchase or build a new steamer for lake business. She will be the full size of the Welland canal. On her arrival in this country she will be cut in two at Montreal and towed through the canals to Ogdensburg, where she will be fitted out again for business.

A meeting of the shareholders of the St. Catharines, Grimsby & Toronto Navigation Co. was held at St. Catharines last week. The reports for the year were found to be very satisfactory, as the season has been a profitable one. The following officers were elected for the year: Manager, Capt. Wigle; president, Thos. Nehan; vice-president, M. Henry; secretary, A. Pay.

Captain T. Donnelly, inspector of hulls, has been at North Bay investigating alleged irregularities in the running of steamboats on Lake Nipissing. It is said that several steamboats had been running without a license and that the government intends prosecuting those who have been doing so.

Mr. O. J. Hickey, chief engineer of the steamer North King, was in the city last week visiting friends.

The following vessels have been laid up here for the winter: Steamers Cibola, Chicora, Ongaria, Garden City, Campana, Carmona, Cuba, Rosedale, Ocean, Clinton, Niagara, Chicoutimi, Steinhoff, A. J. Tymon, Shickluna, Eurydice, Merritt, Greyhound; tugs Frank Jackman, Hunter, Mabel Macdonald, Shickluna, Mabel; schooners Sir C. T. Strubenzie, Rutherford, Laura, Clara Youell, Keewatin, Jessie Drummond, Albacore, Dundee, Emerald, Grimsby, Lisgar, J. G. Worts.

SPARTA.

COLLINGWOOD, ONT.

Special Correspondence to The Marine Record.

Work has been commenced at the Collingwood Dry Dock Shipbuilding Co.'s shipyard on the new tug for Capt. W. A. Clark. The boat will be built of wood and of the following dimensions: length 78 feet, beam 15 feet, depth 7 feet 6 inches. The engines will be fore and aft compound with cylinders 12 and 22 inches by 14 inches stroke. The boiler, which will be of the Fitzgibbon type, will be 6 feet in diameter, 11 feet in length, and capable of carrying a working pressure of 125 pounds of steam. The John Doty Engine Co., of Toronto, have the contract for the engines and boilers.

CONTINUED ON PAGE 9.

THE WATERS OF LAKE MICHIGAN.

Where do the waters of Lake Michigan come from? is an old question, and it is a question as old as the artesian wells. Where do their waters come from? Colonel Foster, an eminent civil engineer, for many years in charge of government interests on the lake, was fond of talking on the first subject. "Every drop of those waters," he was often heard to declare, says the *Chicago Herald*, "came from the Rocky mountains." His theory was that they were brought here subterraneously, but he never, to our knowledge, marked out the course of the subterraneous stream. He announced this as his conviction long before—indeed, he died before—the sinking of artesian wells in Chicago and the consequent discovery of the now undoubted fact.

William B. Ogdon held the same view, and used at times to make himself very interesting in expatiating upon it. With him, as well as with Colonel Foster, it was no more than a theory, but he adhered to it firmly.

Mr. Cregier, who is a local scientific authority, is wont to talk approvingly of the theory in a manner to convince any man. The phenomenon is, the running out of this lake through the others of the easterly chain and over Niagara Falls of an incalculable quantity of water, and this continually, every minute in the hour. The lake has no visible inlets—where then does it get its replenishment? From the Rocky mountains. Through rents and crevices, down into caverns at the roots of these mountains, pour ever the waters from melting snows. Four thousand feet they sink to strike a gravity incline that levels with their floor under Chicago. Under this city and elsewhere on the west side of Lake Michigan—this is the proved theory, theory as good as proved—the snow-covered Rocky mountains are constantly sending their waters to supply flowage and evaporation that is going forward in the watery expanse in sight of a million and a half of people.

Just so, and this supply is received through the economy of precipitation not only over the lake area, but from the surrounding country tributary to the lake. The same must be true of the entire chain of lakes, as even submarine rivers derive their supply from precipitation alone.

EXTENSIVE CONTRACT FOR THE NEW LOCK AT ST. MARYS FALLS CANAL.

Proposals for the construction of the floors of the new St. Mary's falls cannal lock, advertised by order of General O. M. Poe, state that work on the contract must be commenced on or before May 15, 1894, and be fininished on or before December 15th, 1894.

The bids will be publicly opened at 2 p. m. Jan. 12, 1893, at the office of General Poe, in Detroit. The work under the contract will consist of the construction of the floor, culverts, breast walls and miter sills of the new 800 foot lock and furnishing all material, labor and appliances for that purpose. The approximate estimate of material to be furnished and work to be done is as follows:

Portland cement 4,000 barrels. Natural cement 9,000 barrels. White pine timber to be laid 3,421,572 feet b. m. White oak timber to be laid 15,400 feet b. m. Iron, 1,143,272 pounds. Material to be excavated, 6,000 cubic yards. Concrete to be laid, 10,000 cubic yards. Holes to be drilled, 67,500 linear feet. Work shall not be carried on during Sundays and legal holidays, nor at night unless the contractor furnish suitable and sufficient light to enable inspectors to control all portions of the work. In no event shall concrete be laid at night. The detailed drawings plans and specifications show a perfection of engineering skill that discounts any attempt ever made on this class of work on the lakes as the estimate of material to be used would show.

The entire construction, will be carried on under the most rigid inspection and contractors must live up to the exacting requirements of the terms of their agreement with the government.

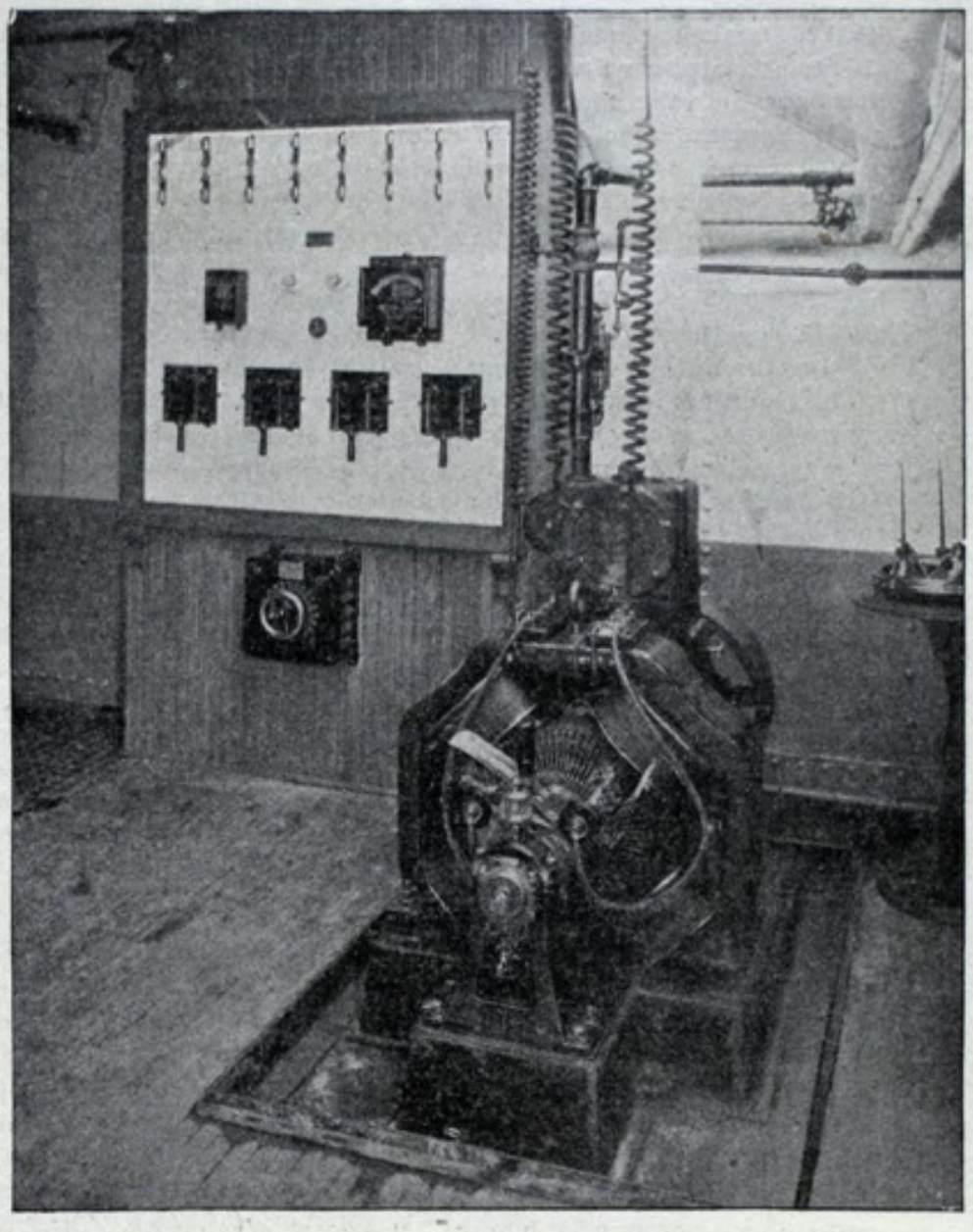
Senator Frye has just introduced a bill (§3512) to provide communication from light-ships and outlying light-houses to the shore.

ELECTRIC LIGHT PLANTS ON THE WHALEBACK STEAMERS WASHBURN AND PILLSBURY.

(Illustrated.)

The special advantages of the combination generating set, comprising dynamo and engine compactly erected on one base, described in a recent issue, are strikingly displayed in the plant which we herewith illustrate.

This plant is the first electrical plant ever placed upon a steamship of the whaleback type, and was installed on the Pillsbury when building at the yards of the American Steel Barge Co., West Superior, Wis. Considerations of space entered largely into the question of this installation, and a small room, 8 feet square was all that could be spared. This precluded the employment of a belt-connected plant, and a generating set of the General Electric Co's type was therefore adopted.



DYNAMO AND ENGINE ON ONE BASE.

The dynamo of the four pole type is of 150 lights capacity, and is directly coupled to a fifteen horse power engine, both having a common bed-plate. Behind the engine and attached to the wall is the white marble incombustible switch-board. The dynamo room is located in the after portion of the vessel on the first lower deck.

The vessel is wired in the usual manner for 150 lights, the best grade of wire for marine purposes being employed.

This installation and that on the sister whaleback, the Washburn, were effected by the Isolated Lighting Department of the Northwest General Electric Co.

THE WILSON TRANSIT LINE CLOSE THE SEASON OF NAVIGATION.

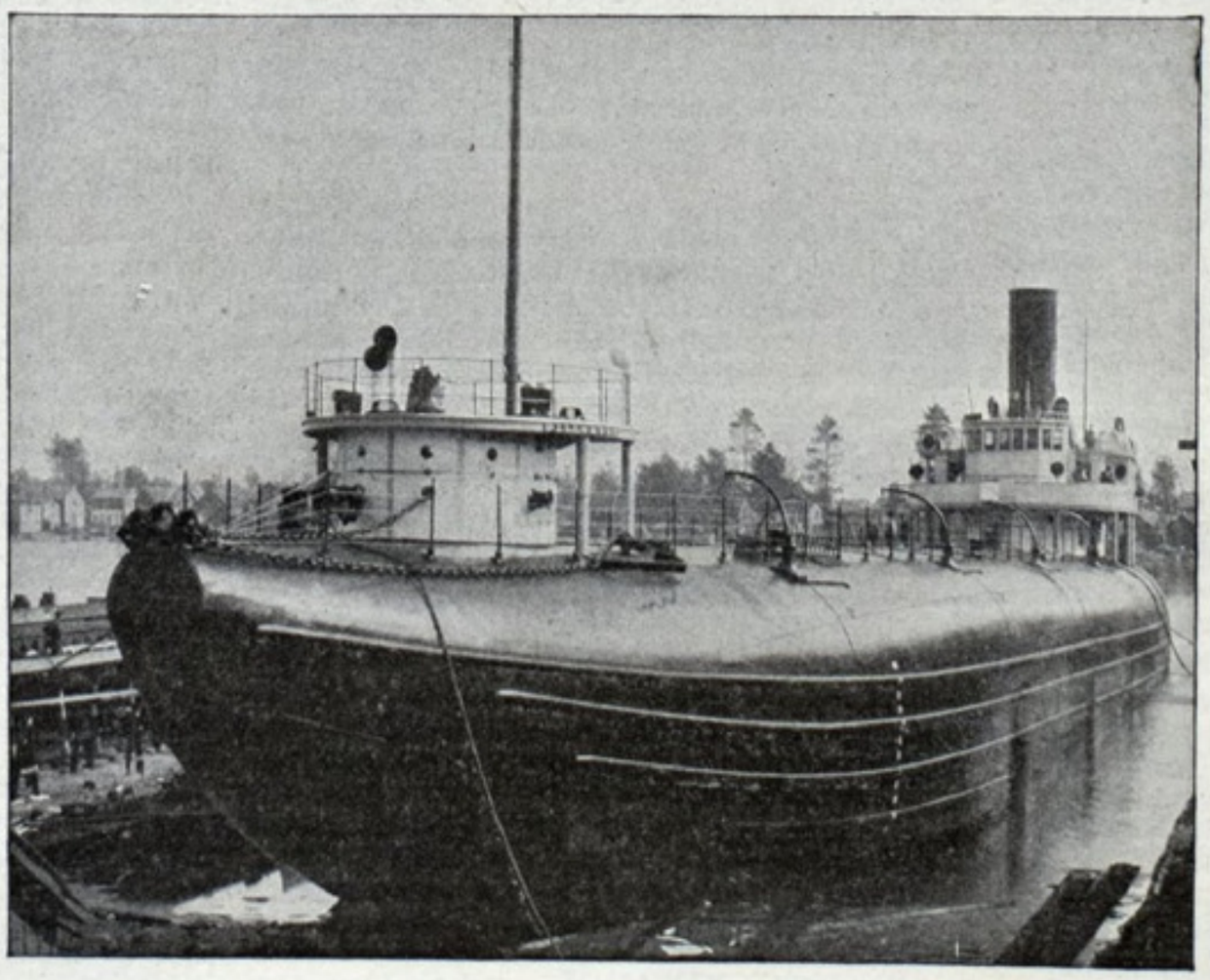
The well equipped steamers Wallula and Missoula of the Wilson Transit Co., Cleveland, O., were the latest large steamers to carry freight on the lakes this season and their safe arrival at Buffalo on Monday afternoon December 19, with grain from Chicago, announced the complete shut down of lake navigation for the season of 1892.

Captain Thomas Wilson, president and general manager of this fleet of high class vessels having a capacity of 25,000 tons, is also financially interested in, and manages at this end of the Lakes the large "whaleback" fleet. There is also under construction, to his order, a large modern steel steamer building at the yards of the Cleveland Ship Building Co., to be ready for service on the early opening of navigation in 1893 and the captain is closely identified with numerous other enterprises, besides being one of the most active and well advised members of the Lake Carriers' Association now holding the office of vice president.

The success attending the management of the Wilson Transit Co., comes as a matter of course, when it is known that Captain Wilson is a practical navigator who has had charge in sail and steam for at least a quarter of a century, and, following in the footsteps of a worthy father, who first settled at Sault Ste. Marie, Mich, he has never ceased in his energetic efforts to keep pace with, if not a trifle ahead of the times and circumstances, so that, when floatiug property to the value of nearly a quarter of a million dollars is kept afloat on the lakes in mid-winter, weeks after other tonnage has been tied up for the season it seems quite natural to refer to the propriety of the departure and inquire which of our owners is doing this thing?

The due arrival of both the steamers at Buffalo, satisfactorily answers the query, yet, it is safe to say that many steamers would have taken another slice of the freight market before laying up if they could have been assured of the steady moderate weather of the past two weeks.

The fleet of the Wilson Trasit Co., fit out sharp and early in the spring and from the present experience, only think of tying up in time to allow their crews the privilege of enjoying their Christmas dinners at home. However this may be, there are few companies whose ships are kept at it longer so as to earn all that it is possible to take out of one season, or are so ably managed as the Wilson Transit Co., of Cleveland, O.



THE "WHALEBACK" PILLSBURY.

A NEW PUBLICATION.

We are ia receipt of the initial number of the *Western Review*, a new monthly publication devoted to the financial and building interests at the head of navigation. The *Review* is a handsome twenty page periodical under a blue cover and is replete with trenchant, well written articles and got up in the highest typographical form. In its salutatory the editor says: "The *Western Review* begins its existence at this time when it believes that the west is now ripe for further development, and will have for its object the furtherance of every project desired and attainable by this part of the country, and shall endeavor to do so until the time has arrived in the not far distant future when the "west shall dominate the east."

This dominating portion of it is good, though few organs have the courage of their convictions in a sufficient degree to announce it in so charmingly frank and candid a manner as the *Review*.

A CHRISTMAS TOKEN.

Our thanks are due the Detroit Dry Dock Co., Ship and Engine Builders, Detroit, Mich., for three useful and handsome little Christmas tokens in the form of glass paper weights inside of which appears a cut of the new sidewheel passenger steamer City of Detroit and the firm name of the builders.

We are in receipt of a handsome calendar for 1893, from John S. Parsons, ship chandler, Oswego, N. Y.

ANNUAL REPORT OF THE UNITED STATES COMMISSIONER OF NAVIGATION.

The shipping interests of the United States is ably dealt with by the Commissioner of Navigation in his annual report, ended June 30, 1892, a part of which we herewith reproduce for the statistical information contained therein:

"If the United States had maintained the protective marine policy inaugurated at the beginning, or had, at the termination of the late war, adopted some form of protection to our merchant marine engaged in foreign commerce, which would have fully counterbalanced the difference in wages and of prices in the United States and in foreign countries, we should to-day see at least one-half of our foreign merchant shipping under the American flag. The actual status of this branch of our merchant marine is indicated by the following statistics, which show the amount of tonnage in the domestic and foreign trade owned by American citizens at various periods and the amount of tonnage of American and foreign vessels entered at American ports.

TONNAGE OWNED BY AMERICANS AND EMPLOYED IN FOREIGN COMMERCE AND IN DOMESTIC OR COASTWISE COMMERCE, INCLUDING THE FISHERIES.

Year	Domestic commerce	Foreign commerce	Total
	Tons.	Tons.	Tons.
1790	132,123	346,254	478,377
1800	305,385	667,107	972,492
1810	443,764	981,019	1,424,783
1820	696,510	583,657	1,280,167
1830	654,213	537,563	1,191,776
1840	1,417,926	762,838	2,180,764
1850	2,095,760	1,439,694	3,535,454
1860	2,974,472	2,379,396	5,353,868
1870	2,797,639	1,448,868	4,246,507
1880	2,753,632	1,314,402	4,068,034
1890	3,496,435	928,062	4,424,497
1891	3,696,040	988,719	4,684,759
1892	3,700,773	977,624	4,678,397

This table strikingly exhibits the growth of our domestic or coastwise shipping, which is absolutely protected against foreign competition by the acts of February 18, 1793, and March 1, 1817.

The tonnage employed in our domestic commerce for the fiscal year just ended (1892) showed an increase of 39 per cent. over that of 1860. The fact must also be remembered that the increase in our domestic tonnage has been attained in the face of sharply competing railroad transportation.

On the other hand, the tonnage of American vessels engaged upon the ocean in foreign commerce fell from 2,379,396 tons in 1860 to 988,719 tons in 1891, a fall of nearly 60 per cent.

Let us now turn to the record of American and foreign tonnage entered at ports of the United States from foreign countries. It is as follows:

TONNAGE ENTERED AT AMERICAN SEAPORTS FROM FOREIGN COUNTRIES.

Year	American	Foreign	Total	Per ct. American
	Tons.	Tons.	Tons.	Tons.
1856	3,194,275	1,269,763	4,464,038	71.56
1860	3,301,903	1,698,291	5,000,194	66.04
1870	2,452,226	3,817,963	6,270,189	39.11
1880	3,140,169	12,111,160	15,251,329	20.59
1890	3,404,584	11,961,020	15,365,604	22.15
1891	3,670,372	11,723,839	15,394,211	23.84
1892	3,746,651	14,433,829	18,180,480	20.61

This table tells the whole story of our maritime decadence in foreign commerce. In the attempt to compete on equal terms with foreign nations our shipping so employed fell from 71.56 per cent. of the total tonnage entered in 1856 to 39.11 per cent. so entered in 1870, and further to 20.59 per cent in 1880. Since 1880, under all the restorative measures which have been adopted, no improvement has been made.

But the most telling record of the decadence of American shipping employed in our own foreign commerce is the following statement showing the value of imports brought into the United States in American and in foreign vessels:

Year	In American vessels	In foreign vessels	Per cent in American vessels
1858	$447,191,304	$160,066,267	73.7
1860	507,247,757	255,040,793	66.5
1865	165,402,872	437,010,124	27.7
1870	352,969,401	538,927,488	35.6
1875	315,257,792	884,788,517	26.1
1880	258,346,577	1,124,265,434	17.4
1885	194,865,743	1,079,518,566	15.3
1890	202,451,086	1,371,116,744	12.9
1891	206,459,725	1,450,081,087	12.5
1892	220,173,738	1,564,558,808	12.3

From this statement it appears that the total value of the imported merchandise entered at the ports of the United States fell from 73.7 per cent. of the total imports in 1858 to 12.3 per cent. in the year 1892, and that the tendency is still downward.

THE SHIPPING OF THE GREAT LAKES.

This branch of our merchant marine, in so far as relates to trade between American ports, is absolutely protected against foreign competition. For this reason, and the fact that our domestic trade between lake ports constitutes by far the larger part of the commerce of the Great Lakes, our shipping so employed is enjoying a high degree of prosperity.

The recent action of the President in imposing tolls on vessels transporting merchandise to Canada through the St. Mary's Falls canal, for the purpose of countervailing and off-setting the Welland canal tolls imposed by Canada, contrary to the treaty of Washington, and discriminating against American ports and vessels, has met a general public approbation, as a proper defense of American interests. The freight traffic of the St. Mary's Falls canal for the season of navigation of 1892 has exceeded 11,000,000 tons, and the increase of the season of 1892 over any previous year will be larger than any annual increase in the history of the canal. The actual freight moved on the Great Lakes in the United States foreign and coastwise trade for the season of 1892 is estimated to be 33,000,000 tons.

Our lake tonnage increased from 711,269 tons in 1882 to 1,183,582 tons in 1892. The naval architecture of the lakes has been revolutionized during the last twenty years. The size of the vessels employed on the lakes has also steadily increased, as shown in the following statistics:

The average registered tonnage per vessel was:

	Tons.
1887	626.3
1888	701.5
1889	790.5
1890	833.8
1891	862.1
1892	884.14

The tonnage of the Great Lakes now embraces a fleet of large steam vessels, models of beauty and nautical efficiency which offer to shippers and passengers an unsurpassed transportation service.

INVESTIGATING CHARGES AGAINST A LOCAL STEAMBOAT INSPECTOR.

The committee of supervising inspectors of steam vessels, which has been holding sessions in Washington since the first of December, investigating the charges against William O. Saville, the local inspector of boilers at Baltimore, charged with neglect of duty on account of the explosion of the boiler of the steamer Wakefield, has completed its work. The argument of the attorney defending Capt. Saville will be placed in typewritten form and the report transmitted to the Secretary of the Navy. The committee which has been investigating the charges consisted of John Fehrenbatch, supervisor at Cincinnati, O.; Chas. H. Westcott, at Detroit, Mich., and Alexander McMaster, at Buffalo, N. Y.

JOURNAL OF THE AMERICAN SOCIETY OF NAVAL ENGINEERS.

The November number of this valuable publication has just appeared, and is the largest as well as the most interesting thus far issued. Of the 325 pages of the number more than a hundred are given to the lectures of Passed Assistant Engineer, I. N. Hollis, which were originally delivered before the Naval War College, but have been enlarged and supplemented for publication. The lectures treat of "The Coal Endurance of Our New Cruisers," "Marine Boilers," "The Marine Engine" and "Miscellaneous," which include, personel, training of men, engine room signals etc. These lectures are very interesting andcontain much information of great value.

Naval Constructor D. W. Taylor has an excellent paper on "Speed Trials," which discusses the subject thoroughly and should be studied by any one who has to conduct careful speed trials. He gives for the first time in print, so far as we are aware, any tabular information on the necessary depth of water for fast ships. Much has been said in a vague way, but Mr. Taylor gives figures.

Other articles are by Chief Engineer, Isherwood, Professor Durand and others.

One of the most valuable articles is an account of tests of riveted joints made for the Bureau of Steam Engineering at the Watertown arsenal. The tests were made with large specimens of thick plates and with the modern forms of treble and double riveting. It is stated that these are the most elaborate tests of riveted joints ever made, and our experience shows this to be so.

The departments of notes, ships and merchant steamers are unusually complete, the latter containing the best description of the new steamer for the Fall River Line that has thus far appeared.

Altogether, the editorial management of the Journal is to be congratulated on this excellent number.

STATISTICAL FACTS ABOUT OUR MERCANTILE MARINE.

Commissioner of Navigation Edward C. O'Brien was the principal speaker at the annual meeting and banquet of the United States Standard Steamship Owners' Builders' and Underwriters' Association, held last week in New York. His address was listened to attentively and brought out many interesting facts about our shipping interests. He said in part:

"Our shipping engaged in domestic commerce has grown with the growth of the country. But the case has been very different as to our shipping engaged in foreign commerce. At the beginning of the year 1828, the foreign commerce branch of our merchant marine enjoyed the protection of discriminating laws applying to both ship and cargo. During that period this branch of our merchant marine greatly prospered, but at last, confidence in the superior skill of our shipbuilders, in the enterprise and push of our merchants, and in the daring and developed attitude of our sailors and shipmasters, led us, in the act of May 24, 1828, to challenge all the world to a free and equal struggle for the prizes of international commerce.

"That went very well with us for nearly forty years. but it finally ended in collapse. The maritime disasters of the war of the rebellion, the change from wood to iron as a shipbuilding material, and the general introduction of steam vessels into the commerce of the globe, once more, threw the advantage on the side of our old rival, Great Britain, where it still remains. In our attempt to compete on equal terms, with foreign nations our shipping engaged in the foreign trade fell from 71.56 per cent. of the total tonnage entered in 1856 to 39.11 per cent. so entered in 1870, and further to 20.59 per cent. in 1880. Since 1880, under all the restorative measures which have been adopted, no improvement has been made. The total value of the imported merchandise entered at the ports of the United States in American vessels fell from 73.7 per cent. of the total imports in 1858 to 12.3 per cent. in the year 1892, and the tendency is still downward.

"Of the amount of compensation allowed by the government for the sea conveyance of United States mails to foreign countries during the year ended June 30, the North German Lloyd Steamship Co. received $172,165, the Hamburg-American Steamship Co., $40,619, and other foreign lines received amounts which in the aggregate, for transatlantic service, swell the amount paid to foreign vessels to $449,405.19. For the same service (transatlantic) American steamers received the enormous sum of $3.48. It is said that comparisons are odious. This comparison is not only odious but exasperating.

"In certain other maritime services, as, for example, the Transpacific and the West Indian and South American, American steamers fare better. Within the next two years there will probably be a line embracing a number of the finest ocean liners afloat flying the American flag and receiving, it is to be hoped, a proper share of the payments made by the United States for carrying the mails, and a fair share of the receipts from the transportation of passengers and merchandise. The receipts of foreign vessels, including the vessels of established lines and tramps, in the trade between the United States and Europe, amount to $200,000,000 a year.

"This enormous sum goes to support the foreign commerce of other countries and constitutes a drain upon the United States. Our merchants, ship owners, ship builders, naval architects, underwriters, sailors, iron and steel workers, miners, shipwrights, canvas manufacturers, rope makers and others, directly or indirectly concerned, are thus losing their proper share of the money now expended in foreign countries for ships engaged in foreign commerce and their navigation.

"Now, turn again to our coastwise or domestic shipping engaged in commerce between American ports on the sea coast, on the rivers of the country and on the Great Lakes; there we see a merchant marine absolutely protected against foreign competition and never before so prosperous. The tonnage employed in our domestic commerce for the fiscal year just ended (1892) showed an increase of 39 per cent. over that of 1860.

"But in the face of all these glowing proofs of American skill and enterprise in nautical affairs, we face the distressing fact that in foreign commerce we have been almost driven from the seas. This failure is simply the relative cost of building and operating American and foreign ships. That is all. It illustrates the fact that free competition with the foreigner under like conditions is fatal to a competing American industry upon the single condition of cheapness on the side of the foreigner.

THE international yacht race for the America's cup has been arranged with Lord Dunraven, to take place toward the close of next summer. Several English yachts will be sent over to participate in races sailed by the New York Yacht Club.

The Marine Record,

ESTABLISHED 1878.

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Rates given on application.

CLEVELAND, O., DECEMBER 22, 1892.

THERE are scores of men now connected with the lake marine who know of others who have dropped out through change of circumstances, business, health or old age. To those who are still to the fore we would say, send your former friend, business associate or shipmate a copy of THE RECORD for one year and allow him to see the vast strides which the lake marine is making year by year. Less than four cents a week or two dollars in the aggregate will permit us to forward fifty-two copies of THE RECORD to any address which our friends may advise us of.

THE furore created by the recent newspaper articles anent the building of Canadian war ships at Polson's Iron Works, Owen Sound, Ont, an arm of Lake Huron, is about subsiding. War ships on the lakes in any form or under any condition, is simply a bugbear, and the building of little fishery cruisers, or revenue cutters, of 120 by 18 feet should not cause the slightest uneasiness in commercial circles. In the event of a future international unpleasantness arising, but small results could be attributed to a lake flotilla, and a base of supplies would be required on each lake, while shore batteries would do the execution.

MR. SHERMAN has introduced a bill in the Senate to extend to the North Pacific Ocean the provisions of the statutes for the protection of seals and fur-bearing animals. The bill was referred to the Committee on Foreign Relations and laid over without action. This is as it should be, pending the settlement of the Bering Sea question, and in any case, no nation ought to think of assuming jurisdiction over sea, air and sky outside of the national boundary line on its coast. Seaward of this assumed line, which we trust will soon be again clearly determined, there is unlimited freedom and the full license of the flag under which the craft is sailing. No nation should attempt to, or be required to exercise a control over the absolute freedom of the oceans, nor need the United States ever be held answerable for the action of the famous Gulf Stream because it flows through, from or by our exclusive territorial waters. Senator Sherman might just as well permit the North Pacific Ocean to remain in the control of "Him who holds the hollow of the sea in His hands" and rest content with taking charge of only that portion of it which may be conveniently got at, located and fathomed with a hand lead-line and where Sundays can be observed the same as it is ashore according to the usages of the country.

THE STEAMBOAT INSPECTION SERVICE.

One of the first cases wherein a charge of incompetency of a local inspector has been brought before a committee of supervising inspectors of steam vessels for action has just been completed at Washington. The cause of the inquiry resulted from the explosion of a steamer's boiler after it had been inspected and vouched for as being up to requirements, and the decision is likely to at least injure the standing of the local. There are many other features connected with the steamboat inspection service that require special committees to work on besides the explosion of a warranted boiler. Notwithstanding the cloak of impenetrable perfection drawn around the service, the hypercritical critics which the chief makes a dig at in his annual report are continually pointing out "holes in the skimmer," and in this connection we may whirl off the boiler inspectors long enough to inquire of the supervising inspectors if all of their local hull inspectors can precisely define the angles between the compass, corrected compass, magnetic and true courses? If our information is authentic, and we believe it is, some rather crude replies would be tendered to the above interrogatory, though we blush to admit the soft impeachment, and only in the best interests of the esprit-de-corps of the service would we even hint at such a derogatory feature being in existence.

THE CONSTRUCTION AND REPAIR OF WHARVES, PIERS AND DOCKS AT LAKE PORTS.

An interested tourist visiting the principal lake ports would at once be impressed with the dilapidated structures and the ancient appearance of temporary work evidenced in the construction of the wharves, piers and docks provided for the commerce of the port and assumed to be under some sort of a municipal jurisdiction, as forming the boundary wall, or demarcation, showing where private property abuts on that of the State, county or municipality.

The utter neglect, in many instances, to keep this line in such repair, so as not to injure the water-way, is nothing less than a travesty on the facilities which a port of any pretensions is expected to offer to vessels consigned to or seeking cargo within its harbor, for, after all which may be advanced in a negative way, the wharfage facilities of a port are as much within the province of a municipality to support in a becoming manner, as the interior of a house may be to its owner or occupant.

This view of the subject may sound somewhat strange to those citizens who but regard the docks and piers as being directly foreign to their interests, a place merely set apart for lading and unlading vessels, and a locality which by no means should be permitted to intrench upon the duties of their elective or appointive local officers; in fact a vicinity of which they know little about, and care less, as long as tonnage can wriggle in and out and provide a fair means of transportation for freight and passengers, consoling themselves with a vague idea of the federal government having some sort of a control over the harbors, and if they are not what they ought to be, then "Uncle Sam" should see to it and make provision for carrying on the commerce of the port direct, and indirectly that of the country at large.

It is on account of the foregoing views that we now find our most important harbors bounded in spots with decaying old pile wharves, and docks which it would be dangerous to set foot on. Nor does the damage to the port stop at this, for when a good round sum is voted by the city council to dredge out their waterways, the middle of the channel can only be scooped out; for, if the dredge should attempt to deepen in the wake of the dock, undermining and a total collapse would ensue, so that each side is left to ooze back into the dredged channel and in a short time the waterway is in the same state as it was before the middle was scooped out; yet, the dredging has been done, the city has apparently fulfilled its duty, and that is all there is to it.

The time has now arrived when each lake port should exercise more vigilance in regard to the original construction and keep-up of their harbor boundaries. City ordinances are hedged around contractors, plumbers and tradesmen of almost every degree who build, open, alter or repair work in the city, and the same supervision ought to exist in relation to the building and keeping in first-class repair of the private docks and wharves of each port, and, as the entire property is chiefly in the hands of private owners, this would be the only means of securing a presentable dock front and maintaining a uniform depth of water in the channels.

TO SURVEY AND CLASSIFY MODERN LAKE TONNAGE.

The recent meeting of underwriters, or more properly speaking, their general agents, at Detroit, to formulate plans and adopt classification rules for the survey and rating of modern lake tonnage, resulted, as it was bound to do, in appointing a committee to bring the several interests into line on a mutually acceptable basis.

It is not to be supposed that so momentuous a departure to the entire lake marine would be encompassed in all of its bearings by a body of men who it is well known exhibit little or no unanimity in their excessive desires to place business, besides, anything like a working majority among the general agents in favor of any one set of rules is not found to exist even at this date, and we opine that the officials represesenting universally known classification societies have received an equal amount of encouragement from insurance circles, while another wing which now seem to be growing in the ascendancy, favor the adoption of a revised lake system of classification, arguing that "what is sauce for the goose," etc., and any features which may benefit a national or foreign association would also redound to the welfare of foreign and domestic shipping, several well known and prominent owners of large steel tonnage, also one of the principal shipbuilding firms, lean to this view of the question and have drawn up rules which are expected to meet the approbation of at least a majority of interests, and, from the most recent developments of the promoters the new classification book is to be launched with the cream of the lake tonnage for a starter under the title of the "Reliance" Great Lakes Register of Shipping.

The committee of underwriters, composed of Messrs. Sandrock, of Buffalo, Clark, of Detroit, and McDonald, of Chicago, appointed to formulate new rules, has not yet made a report, nor is it learned how they view the new born "Reliance" rules, but, suffice it to say, that under writers are more likely to follow in the path of owners and builders than vice-versa, nor will the fact of a classification in a new book, properly endorsed, result in any derogatory action being taken by underwriters in the matter of accepting risks.

VESSEL owners who have not been hurried into placing their tonnage for winter storage at Chicago are likely to receive better figures than those hitherto obtained. Seven million bushels more grain is already in Chicago over that of a corresponding date last year, and a large annual increase is still in sight. An increase of nearly three million bushels is recorded for the past week, and with a crowding of elevators, floating storage will no doubt be eagerly looked for in the near future. The same is also true in point of receipts at Duluth.

FROM present indications no time should be lost by the Lake Carriers' Association in appointing a committee to attend to the bill introduced in the House last session by Mr. Brickner, of Wisconsin, providing for aids to navigation on the lakes. A special from Washington says that the bill has been reported back by the Committee on Interstate and Foreign Commerce, stripped of many of the items which have been heretofore recommended. Appropriations which have been eliminated from the original bill are as follows:

On Detroit river, a lightship to take the place of the private lightship now maintained by the Lake Carriers' Association; floating lights at Limekiln Crossing to replace private lights; lighthouse at Ballard's Reef to replace private lights; range light to mark the center of the line of the channel from the foot of Fighting Island; a light on the north end of Mamajuda Island; range lights above Grassy Island. These improvements would have cost $67,500. On St. Mary's river, to move the upper St. Mary's ranges, which would have cost $2,000; Lake Superior lights, at Superior Bay, which would have cost $1,200; a fog bell at Frankfort harbor, which would have cost $1,000, were eliminated.

As all of these aids are essential to safe navigation, and will no doubt be so reported by the Lake Carriers' Committee now in session on aids to navigation, it will be seen that a favorable representation of these necessary aids should be made at Washington so that those who are not conversant with the present requirements of the lake marine would recognize the pertinency of the aids asked for and lend their assistance to the passage of the bill.

MORE NAVAL PROTECTION FOR THE LAKES.

The United States practice cruiser Bancroft, which ought to have been built at the yards of F. W. Wheeler & Co., West Bay City, Mich., if the lowest bidder had counted for anything outside of the 1817 treaty relating to naval armament on the lakes, is now completed at Moore's shipyard, Elizabethport, N. J., and it is expected that she will be ordered to the lakes during the Columbian Exposition. Her dimensions are: Length on water line, 187 feet 6 inches; beam, 32 feet; draught forward, 11 feet, and draught aft, 12 feet. The Bancroft can be taken through the St. Lawrence system of canals.

The lock sills of the Cornwall canal have ordinarily on them only nine feet of water, but with a vessel like the Bancroft, with a displacement of 839 tons, no difficulty would be experienced in bringing her up to a nine-foot draught through the aid of pontoons such as are owned by the Collins Bay Rafting and Forwarding Co., L'd, at Collins Bay, Ont. Should the Bancroft be ordered to the lakes, the Michigan would have to go out of commission.

LAUNCH OF THE WHALEBACK 126.

The whaleback barge 126 was successfully launched at the yards of the American Steel Barge Works on Saturday afternoon last. The event of a whaleback launch has now become such a regular occurrence as to excite but little interest, still quite a crowd collected to witness the event. The ice in the slip was eleven inches in thickness. Two seams were cut its entire length and on to the cake thus formed the barge was permitted to slide. It was a novel launching, but like everything else done at the works up to date, was successfully accomplished and another marine monster awaits the early opening of navigation in the spring to sieze hold of all transportation favors. There is no use of hiding the fact that the whalebacks are going to cut a wider swath than ever in the carrying trade of the lakes and others are yet to be heard from in this respect as there is a continual hum around the yards of the American Steel Barge Co.

TO EXTEND THE CIVIL SERVICE.

The Secretary of the Treasury has had a conference with the President in regard to an extension of the civil service regulations to the customs service, the lighthouse service, the steamboat inspection service, the life saving service and other branches of the Treasury Department.

NEWS AROUND THE LAKES.

CONTINUED FROM PAGE 5.

The boat will be lighted by electricity, supplied by a 4,000 candle power dynamo. A separate engine will give the motive power to the dynamo. The contract calls for the completion of the tug at the opening of navigation in 1893. She will be engaged in the fishing industry on Lake Huron and will carry a crew of fifteen men. When completed the cost will be about $10,000.

The vessels wintering at this port are as follows: The Great Northern Transit Co.'s fleet, Baltic, Pacific, Atlantic and Northern Belle; The North Shore Navigation Co.'s fleet, City of Midland, City of London, Favorite and Manitou; tugs, Saucy Jim, Bob Foote, Grace Darling, W. J. Aikens, Leudeau, Ethel, Ranney, F. A. Hodgson, Telegram; also the schooner Craftsman and the Government dredge Challenge.

OWEN SOUND, ONT.

Special Correspondence to The Marine Record.

The last arrival of the season was the tug Alpha.

The amount of freight the C. P. R. steamers carried up and down from Ft. William to Owen Sound is as fol lows: The Manitoba, Capt. Anderson, 16,000 tons up and 17,700 tons down, besides 875,000 bushels of grain; Athabasca, Capt. McDougall, 12,300 tons up and 16,600 tons down, besides 800,000 bushels of grain; the Alberta, Capt. McAllister, 11,000 tons up, 12,000 tons down, besides 750,000 bushels grain.

Captain Simpson has advertised for 50 ship carpenters at $1.75 a day, which is considered good wages for this town. He guarantees them work until next May. With this help he will have close on to 100 men employed.

Quite a few of the employes of the Polson Iron Works have left here for Hamilton, where they will obtain work in another shipyard.

Mr. White, C. P. R. florist, gave a banquet to the principal officers of the steamers the other evening.

Most all of the mariners have returned home, among whom I have noticed Capt. A. McLeod, Capt. Neil Campbell, Capt. Jas. Foote, Capt. J. McNabb, Capt. C. Hill and mates Halverstein and McIntyre.

The new general and marine hospital at this port will soon be ready for use.

The revenue cutter Constance is actively engaged in the Gulf of St. Lawrence at present. She left a week ago Saturday for Grosse Isle on an inspection tour of the public works now in progress at quarantine. The Constance is one of the cutters built by the Polson Iron Works Co. for the Dominion government and has proved to be a thoroughly well built, staunch and handy vessel. T. W. B.

MARITIME LEGISATIVE NOTES.

Special Correspondence to The Marine Record.

WASHINGTON, D. C.—Mr. Quay introduced a bill (S. 3,592) on Thursday last to provide an American register for the steamer Oceano, of Philadelphia, Pa., which was referred to the committee on commerce.

The House of Representatives has passed a bill (S. 869) to provide an American register for the rebuilt barge Sea Bird, of Perth Amboy, N. J.

The Crescent City Marine Engineers' Beneficial Association No. 15. of New Orleans, and the Crescent Harbor No. 18 American Brotherhood of Steamboat Pilots introduced a petition to Congress opposing legislation admitting foreign vessels to American registration.

The licensed officers of the American merchant marine of Portland, Oregon, introduced a protest in Congress against licensing and granting American registry to the alien officers of the steamships City of Paris and City of New York, and petition to retain the management of all steamers conveying the American flag to regularly licensed American officers.

A bill (H. R. 1976) relating to contracts of common carriers, and to certain obligations, duties and rights in connection with the carriage of property, was read the third time and passed on Friday last. The text of the bill is to prevent foreign steamers from limiting their common law liability as common carriers through or by any clauses contained in their bills of lading.

RAFT TOWING ON THE GREAT LAKES.

Senator McMillan has introduced a resolution asking for an investigation of the present system of raft towing on the Great Lakes and their connecting waters. The resolution authorizes the Secretary of War to appoint a board of three officers of the engineer corps of the army to look into this subject and report to Congress what restrictions, if any, should be placed upon the size and manner of constructing and towing rafts upon the waters mentioned.

THE MUTUAL LINE CAPS THE RECORD FOR LAKE TRANSPORTATION.

The Mutual Line of steamers, under the shore management of Geo. P. McKay, has placed the transportation record between Escanaba and Ashtabula away in advance of all other tonnage on this season's work.

The handsome steel steamers, Corsica and Corona, owned by the Mutual Transportation Co., Cleveland, O., have walked away from all competitors to the tune of thirty-nine round trips, each carrying 102,000 tons of iron ore between Michigan and Ohio ports during the season. The Corsica, under command of Capt. William Cummings with Chief Engineer William Stein, has gone straight along and most successfully ended a favorable season and the same may be stated of the Corona, Capt. John B. Hall and Chief Engineer A. L. Wilcox, so that if ever men were entitled to a Christmas holiday the officers of these large steamers certainly are.

To the fraternity, the full measure of this excellent record will be apparent, yet it could only have been accomplished with the prompt dispatch characteristic of the Line, in carrying cargo one way, and the most skillful handling of an A1 ship and machinery. Those who have but a superficial knowledge of the road traversed, will no doubt be surprised to learn that the six hundred miles of navigation between Escanaba and Ashtabula comprises the most tortuous navigation for a three thousand ton steel steamer that can be found on the face of the globe. Threading the Suez Canal, the Dardanelles, Bosphorus, the intricacies of the islands in the China seas, the several straits or the renowned River Thames is positively clear sailing compared to the navigation between Pt. Pelee on Lake Erie and Lake Huron and then only to be hemmed in again from the Straits of Mackinac to destination. Seventy-eight times this season is the wonderful record of these lake "greyhounds," in keeping clear of all trouble over this crooked and intricate course, with upwards of an average of 2615 tons of ore in them and frequently only an inch or two of water to spare under them, at other times only evenly water-borne and walking through two or three inches or more of soft bottom.

The technical skillfulness of lake seamen has sometimes been aspersed, though no breath of incompetency has ever touched the engineers as a class, yet, when men and ships can be produced to make such records as the foregoing, we would like to say to the hypercritics "hands off." Furthermore, there are without doubt hundreds of others on the lakes to-day if given the ships and opportunities could duplicate this, the grandest record yet achieved in the safe and expeditious handling of large steel tonnage, traversing 42,800 miles in about seven and a half months, making an average of seven and a half miles an hour for every hour of the season of navigation in and out of port.

The Mutual Line, comprising three large steamers, and the Menominee Line, of six sister steel steamers, are all managed with the Orient Line by Capt. McKay and Shore Engineer C. B. Calder. Each vessel in the fleet has given entire satisfaction throughout the season and in their respective trips equal the good work of the Corsica and Corona in so far as efficiency of machinery and skillful handling is concerned.

THE PORTAGE LAKE CANAL.

The Portage Lake Canal cutting through Keweenaw Point, Lake Superior, and now under the jurisdiction of the United States is a valuable protected waterway and is gaining in the amount of commerce and shipping passing through it.

The following particulars of this season's traffic has been collected by the Marquette *Mining Journal's* Houghton correspondent.

"The close of navigation makes it possible to give the statistics on the transportation to and from the copper country and through the Portage Lake canals. The number of steam vessels bound up was 665; bound down, 453; total 1,118, having a tonnage of over 600,000 tons. The number of sailing vessels bound up was 219; bound down, 103; total, (*sic*) 312. The total amount of cargo tonnage carried was 484,899 tons. The number of passengers carried by steamers going west was 16,962; going east. 30,124; total, (*sic*) 30,086.

The amount of refined copper carried away, from May to November 30, going west, 5,394 tons; going east, 41,516; total, 46,910 tons or 93,820,000 pounds. This at twelve cents a pound, the average price for Lake Superior copper, represents a value of $11,584,000. This vast amount represents only a portion of the immense wealth taken out of our mines.

There was brought to the copper country 221,689 tons of coal. The tonnage on other merchandise was as follows: Flour, 127,024 barrels; corn, 2,004 bushels; wheat, 15,824 bushels; iron, 2,597 tons; lumber, 27,196,000 feet; miscellaneous merchandise bound west, 88,998; bound east, 12,646 tons.

Such a showing as the above will give the reader some idea of the magnitude of our resources and of the importance of the Portage Lake channels as a waterway for vessels."

FLOTSAM, JETSAM AND LAGAN.

The spars of all the Lehigh boats will be taken out and trimmed to pole spars.

The Detroit Dry Dock Co., also contemplate the enlargement of their second dry dock at Detroit.

The Detroit Dry Dock Company has prepared plans for another big dry dock and will very probably begin construction early in the spring.

The work of converting Leathem & Smith's schooner I. N. Foster into a steamer is to be done at Manitowoc. An expenditure of $8,000 will be necessary.

Capt. Frank A. Dority, master of the steamer Colorado during the past two seasons, will sail the new Ann Arbor No. 2. She leaves Toledo this week for Frankfort, Mich.

Capt. George McLeod will hold a survey on the schooner Nelson at Detroit in a few days. The Nelson was sunk in the Detroit river by the steamer Susan E. Peck on Nov. 20.

Capt. F. J. Hackett is to receive $575 from the Dominion government for removing the sunken schooner Minnie Davis at Bar Point. He is waiting for dynamite with which to blow her up.

The new steamer building by the Detroit Dry Dock Co., for the Western Transit Co., of Buffalo will be completed on April 15, 1893, according to contract. She will carry 2,800 tons and steam 13½ miles an hour.

The steam barge Raleigh, lying at the Twenty-second street bridge, Chicago, was damaged to the extent of $750 by fire last week. The fire originated from an overheated stove in the cabin. The vessel is owned by W. S. Whipple, of Detroit, Mich., and the loss is fully covered by insurance.

A line of telegraph has been completed between Little Current, Ont., and Grand Manitoulin Island, the largest island in the lakes, and forming the north shore of Lake Huron. This line, established by the Dominion Government, will prove of great value in reporting casualties to vessels navigating in this dangerous locality.

The steamer John Duncan, Capt. Eugene Marquette, reached Milwaukee on Saturday from Green Bay. She had a narrow escape from fire during the gale on Lake Michigan last Thursday night. The sea was high, and when off Pilot Island the pitching of the boat threw down a lamp. The blaizing oil set fire to the cabin and the whole front was burned out before the blaze was extinguished, the loss was about $1,000.

Advices from L'Anse are to the effect that the burned steamer Northener rests in about 6 feet of water forward and about 15 feet aft. By many it is believed that the hull is broken in two, but Capt. W. H. Rounds, the insurance adjuster, states that he has seen worse cases raised and converted into lumber carriers. The hull is burned to the water level. The story comes from various sources that the steamer was set on fire by the crew to save them from making the trip to Duluth in her. An examination of officers and crew before a local justice is said to have developed facts that point to incendiarism.

The steamer Frank L. Vance had a narrow escape from what might have proved a serious disaster during her last trip up the lakes this season. Signs of a loosening wheel were noticed in the course of the passage and when the steamer was placed in drydock at the Milwaukee Drydock company's south yard the other day it was found that the key which secures the wheel to the shaft had backed out of its seat until brought up against the rudder stock, while the wheel had accompanied the key along the shaft fully four inches. The slightest deviation would have caused the key to pass the rudder stock and in that event the steamer would have been rendered helpless.

Anent, the construction of the new turtle-back steamer to be built in Duluth this winter, the Buffalo *Enquirer* is led to remark as follows: "There have been three new types of steel steamers brought out on the lakes during the past few years. We have whalebacks, straightbacks and monitor steamships, but another type still, it is said, is to be built this winter at Duluth. It is to be called a "turtle-back" vessel and from a description published in this week's MARINE RECORD, will be a grand combination of all that is useful and ugly in all three of the former classes of tonnage. The RECORD says: 'The new design is expected to show great cargo efficiency, strength and seaworthness, having midship section resembling the whaleback, stem like the monitors, that is with the fore-foot reduced almost to nothing, but carrying the usual stem above water, and sheerless on the upper works like the straightbacks.' The lake family of amphibious freaks grows apace."

MARINE APPLIANCES JUST PATENTED.

Special Correspondence to The Marine Record.

WASHINGTON, D. C.—The following appliances for marine uses have been entered for patents here this week: Boiler, T. L. Sturtevant, Farmington, Mass.; marine boiler, J. F. Wangler, St. Louis, Mo.; beam compass, W. S. Robinson, Chicago, Ill.; hoisting apparatus, J. E. Walsh, New York, N. Y.

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

IMPORTANT CHANGE IN THE LOCATION OF MACHINERY IN LAKE STEAMERS.

To the Editor of The Marine Record:

CHICAGO, ILL., December 20, 1892.

I herewith enclose a clipping from the Chicago *Tribune* of recent date, which is so much in line with the substance of my communication to THE MARINE RECORD, printed in your issue of November 10th, that I should be glad to see it given additional publicity through your columns, and thus help along the good work of reform in steel ship building on the lakes, which is apparently making such a promising start. Yours truly,

THOMAS BLACK.

"News of an important change in the construction of lake steamers was received by Chicago underwriters recently from Bay City, Mich. It was that the engines of the big steel steamer W. H. Gilbert, which are in the stern, as usual on lake boats, are to be placed amidships, after the style of ocean-going steamers. Three other steel boats, now under construction at Bay City, will be changed in the same way. The boats will be greatly strengthened by the addition of the extra steel. All these changes are the direct result of the loss of the steamers Western Reserve and W. H. Gilcher.

"'Placing the machinery amidships,' underwriter McDonald said, 'will be to relieve the strain of an immense dead weight clear to one end of the boat when it is without cargo. There is no idea of requiring engines to be placed amidships by the underwriters. The Bay City builders are following their own ideas.'

"'Had the engines of the Western Reserve been amidships,' said a marine man, 'it would never have broken in two. I do not regard any boat 300 feet long, with 800 tons of dead weight at one end, and with nothing to counterbalance the strain, as seaworthy, when going into a head sea. Lake vessel men will learn in time that they cannot run counter to the world's experience and not come to grief now and then. This last season it has been quite too frequent.'"

[The Gilbert's engines will not be placed amidships, though those of the new steamers will.—ED.]

MARITIME LAW.

BILLS OF LADING DO NOT EXEMPT CARRIERS FROM GENERAL AVERAGE CONTRIBUTIONS.

Judge Jenkins, of the United States District Court for the Eastern District of Wisconsin.

This case is the Union Marine, Liverpool, North American, and Atlantic Insurance Companies, vs. the steamer Roanoke, W. F. Botsford, C. D. Thompson, and James W. Martin, and was brought to determine the liability of a vessel when loss occurs by reason of the wetting of the cargo in case of fire, and also whether it is competent for a common carrier to exempt itself from liability as against general average contribution.

In May, 1890, the steamer Roanoke, while lying at Buffalo with an assorted cargo of merchandise, was partially burned. Inasmuch as a portion of the cargo was damaged by water in attempting to extinguish the flames, the insurance companies claimed a general average contribution from the vessel to make good the loss. The owners of the vessel resisted the claim; maintaining, first, that a vessel was not compelled to contribute for goods damaged by water in putting out a fire. Suit was brought by the insurance companies and a decision was rendered in their favor last June. The vessel owners then claimed that their bills of lading exempted them from such contribution; also that the bills of lading contain clauses by which any insurance on the cargo inures to the benefit of vessels, and that therefore the insurance companies could not recover. Both of these propositions are held to be untenable by Judge Jenkins in his decision just rendered. The decision is as follows:

The stipulations of the bill of lading, so far as they are material to be considered, are these:

It was agreed that the transportation and forwarding of the goods for the consideration stated, is subject to the conditions of the bills of lading, which contain a large number of stipulations.

There are three questions which arise upon this hearing. (1) Whether it is competent for a common carrier to exempt itself from liability as against general average contribution; (2) whether the clause which gives to the carrier the benefit of any insurance upon the property, precludes the insurers from maintaining an action to recover for such contribution; (3) whether this bill of lading does in fact purport to exempt carriers from such liability.

The Court entertains grave doubt whether common carriers should be permitted to exempt themselves from such liability. It is true the Supreme Court of the United States has sustained the right of common carriers to exempt themselves from their common law liabilities not growing out of their own negligence. But this matter of general average rests upon very peculiar foundation, and can hardly be termed a common law liability. The master is made the agent in the law of the vessel, of the cargo; of the parties owning the cargo and owning the vessel, and given the discretion in time of emergency to subject the one to loss for the preservation of the other. If in case of storm it becomes necessary, for the preservation of the ship and cargo, to throw overboard part of the cargo, the law compels that which is saved to contribute for that which is lost. And, as I am inclined to think, it would be seriously against the public policy of the law of the sea to permit carriers to say that the ship shall be exempt from contribution, while the cargo remains subject to contribution.

In the next place, the Court is of opinion that these bills of lading do not undertake to exempt the carrier from liability to general average. They exempt them from loss of damage by fire or wetting. It undertakes in many words to exempt the common carrier from nearly all the common law liabilities. And the Court must consider the fact that these stipulations are all printed in very small type, so that it would require the shipper of cargo to make a very minute examination of the paper before shipping, to ascertain just what liabilities were imposed upon the carrier, and which are exempted. And the Court must also take into consideration the fact that generally bills of lading are delivered after the shipment of cargo, not before; and, while upholding the right of the carrier to make his contract and exempt himself from common law liabilities in large degree, yet these terms of limitation and restriction must be expressed clearly and decisively in the contract, that parties may know the terms of the contract.

Jettison and general average have been known for centuries in the law of the sea; been well understood by all engaged in traffic upon the sea. They are simple and expressive terms, and the Court is not inclined by any nice or dubious construction of an obscurely worded instrument to exempt the carrier from responsibility for that which he ought equitably to bear, when, if he could legally exempt himself by contract, such exemption could have been expressed in well-understood phrase.

The Court can not believe that it was designed by the parties to this contract that the carrier was to be relieved of that equitable claim of contribution for the saving of the ship. Had it been so designed it would not have been expressed in such way that it must be arrived at only by very nice and subtle construction and distinction of words, when simple and well-understood expressions would have better answered the purpose.

With respect to the claim that this provision covers such a loss as the present, I am inclined to the opinion that it is ruled by the decisions which were referred to by the Court upon the previous hearing of this case, where similar provisions in the statute were claimed to exempt the carrier from general average contribution. The courts in England ruled that the exemption of cargo from liability for injury occasioned by fire or wetting corresponded with the ordinary exemption from the accidents of navigation, and did not work exemption from liability to contribute toward general average. The language of the bills of lading is very similar to that employed in the act of Congress and the English act, with the exception that here there is a provision that the carrier shall have the benefit of the insurance arising from the liability mentioned; but the court is not prepared to say that that clause is sufficient to give the carrier exemption from a liability which is imposed by law in the interest of the property of all concerned, where a loss has been occasioned by a sacrifice of a part of the property to save the whole.

There will therefore be a decree for the libellants for the sum of $2,505.62, with interest from the filing of the libel.

THE PENBERTHY INJECTORS.

The great increase in the business done by the Penberthy Injector Co., of Detroit, Mich., has necessitated a large increase in the capacity of their works. During the past year they have crowded their factory with lathes, and have yet been unable to keep up with their orders. They already have on their books contracts from traction-engine manufacturers and others aggregating nearly 4,000 injectors, and this, together with the unprecedented sale of their new specialty, the "safety crankpin oiler," led them to decide on the erection of a new factory on the same site as their present one. The new factory when completed will enable them to double their amount of machinery, and therefore to more than double their output of injectors and oilers.

ELECTRIC LIGHTING—INCANDESCENT LAMPS.

The U. S. Court of Appeals has granted the injunction asked for by the Edison General Electric Co. against the Sawyer-Man Co. (Westinghouse).

The injunction is a permanent one forbidding the latter company to manufacture incandescent lamps infringing the Edison patent. The court imposes the condition that the Edison Company must sell lamps for use with Westinghouse apparatus installed prior to Judge Wallace's decision of July 14th, 1891, "Upon terms reasonable under the circumstances of the particular case."

No provision whatever is made for supplying lamps to Westinghouse apparatus installed since July 14th, 1891, or that may be hereafter installed, and the question of terms, prices, etc., for lamps for use with apparatus installed before that date is left open, except that they must be "reasonable under the circumstances of the particular case."

TO RE-SURVEY THE LAKES.

The sub-committee of the House Committee on Appropriation has given a hearing to Representative Chipman of Detroit, Capt. Turtle of the U. S. Engineer Corps and others with reference to the appropriation of $50,000 for a re-survey of the Great Lakes. Mr. Chipman made an earnest plea for this project and stated his attention had been called to the matter by the Lake Carriers' Association. The members of the sub-committee seemed impressed by the statements made, and it is believed they will incorporate the item in the Sundry Civil Appropriation Bill.

NOTES.

GEORGE C. BAKER'S submarine boat was informally tested recently on Lake Michigan, off South Chicago, in the presence of two members of the Torpedo Board Commission of the U. S. Navy. At the first trial the boat would not sink. She was returned to the dock, where additional ballast was secured, and another trial proved more successful.

F. W. WHEELER & Co., West Bay City, Mich., have adopted the rules of the "Record of American and Foreign Shipping" issued by the American Shipmasters Association, New York for the classification of the tonnage built at their yards. After a quarter of a century's experience the Record rules have been found thoroughly efficient.

THE annual volume prepared by the Bureau of Naval Intelligence, containing a review of the operations of foreign navies as well as our own, has just been issued. The book is the most valuable that has yet been compiled by the Navy Department, and embraces in its contents all the information gathered by our foreign naval attaches relative to progress in naval matters generally, as well as a complete summary of the advances made in the United States.

IT IS now rumored that Capt. Alex. McDougall, general manager of the American Steel Barge Co., West Superior, Wis., is considering plans for establishing a whaleback shipyard at Galveston, Texas. The yards at Everett, Wash., the passenger whaleback, the largest dry dock on the lakes, and other wide departures were only allowed to dawn upon the public before they were accomplished, and it is quite possible that the Galveston industry may be under full blast and smelting ore from the West Indies before much more is heard about it.

THE sixty-four page illustrated catalogue of steam launches, yachts, tug boats, marine engines and boilers, propeller wheels and general equipment, issued by Chas. P. Willard & Co., Claybourn and Southport Aves., Chicago, should be in the hands of prospective buyers of small or fancy tonnage. For a trade catalogue the book is inclusive and voluminous.

THOSE who are engaged exclusively in marine industries cannot be expected to know of the importance and ever growing volume of the electrical mechanism and industries now established in the United States, yet, from the most recent estimates it is gathered that there is now invested in this enterprise alone the sum of $729,000,000, and of this amount, $350,000,000 represents the proportion which electric lighting and power have attained; $100,000,000 is also the estimated investment in electrical supplies, of which the electric lighting and railway appliances constitute a large proportion.

M. N. FORNEY, who is probably the best known writer and one of the most technical experts in the art of mechanical engineering in the United States, intends changing the name of his valuable monthly periodical from the *Railroad Engineering Journal* to the *American Engineer*. This change of title, which is essentially within the province of the publication and distinctively its forte, would have been brought about earlier only that a weekly journal published in Chicago, but now defunct, assumed the proprietary right and thus held off Mr. Forney. All success attend the new departure. Yet, that is assured, and after all, Mr. Forney, "what's in a name?"

PROPOSALS.

U. S. ENGINEER OFFICE, HICKOX Building, 185 Euclid Avenue, Cleveland, Ohio, December 12, 1892. Sealed proposals for dredging in straight channel at Sandusky Harbor, Ohio, will be received at this office until 2 o'clock p. m., standard time, of Friday, December 30, 1892, and then publicly opened. Specifications, blank forms and all available information will be furnished on application to this office. JARED A. SMITH, Corps of Engineers, U. S. A. 15-29.

UNITED STATES ENGINEER OFfice, Detroit, Mich., December 13, 1892.—Sealed proposals for furnishing all labor, materials and appliances, and constructing the floors, etc., of the 800 foot lock at St. Mary's Falls Canal. Mich., will be received at this office until 2 p. m. standard time, January, 12, 1893, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office. O. M. POE, Colonel, Corps of Engineers, Bvt. Brig. Gen., U. S. A. 15-5